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ABSTRACT

The impact of class size reduction at the early levels on student achievement in various states is discussed in this report. The Tennessee Student Teacher Achievement Ratio (STAR) study, a statewide longitudinal evaluation of the effects of class size on student achievement and development in primary grades K-3, analyzed demographic and basic skill data from student records of 2,837 students in classes of various sizes. Findings indicate that small class size is a significant factor in kindergarten readiness achievement and is most effective in cases of low socioeconomic status and high attendance. A second phase of Project STAR, based on observations and interviews with 49 effective first-grade teachers, identified shared characteristics and instructional teaching strategies. Findings indicate that effective teachers have high expectations for student learning, stress family involvement and individual attention, and have clear discipline and organizational policies. An accompanying article by Brad Duggan discusses "Real Issues and False Assumptions about Class Size." Based on observation of the Texas school system, a conclusion is that reductions in class size at early levels has had a significant positive impact on student achievement. (LMI)

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The Case for Smaller Classes and Better Teachers

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Helen Pate Bain and Roseanne Jacobs

Principals need to keep their eyes on the class-size issue because the American people are very much interested in that issue, too.

The most recent Gallup Poll of public attitudes toward education once again showed that citizens think small classes are important.[1] Eighty-eight percent of nonpublic school parents, 82 percent of public school parents, and 77 percent of those with no children in school told Gallup that they believed small classes made a great deal of difference.

A second question asked if parents would favor a program to reduce classes in the early grades to a ratio of 1:15. Eighty-two percent of nonpublic school parents, 81 percent of public school parents, and 73 percent of those with no children in school responded "yes." And from among this group of people who answered "Yes" 71 percent of the nonpublic school parents, 72 percent of the public school parents, and 66 percent of those with no children in school said they would be willing to pay higher taxes to pay for such a program.

The question of class size remains a continuing concern for parents, principals, and teachers. Many parents put their children in private schools in order to have smaller classes. Teachers also believe that small class size makes a difference in the quality of a child's education. Recent research provides data to support this widespread belief in the importance of small classes in grades K-3.

What the States Are Doing

In 1984 the Texas legislature mandated a 1:22 maximum teacher:student ratio in grades K-3 to be achieved over a 5-year period. Since then, the average K-2 class size in Texas dropped to 20 to 21 students per teacher, while student achievement rose by significant margins. (See Brad Duggan's accompanying article.—*Editor*)

In 1984 the Indiana General Assembly appropriated $19 million for Project Prime Time, a plan to reduce the teacher:student ratio in first grade to 1:18 across the state. In proposing the program, Governor Robert Orr said, "Children spend their first few school years learning to read, and the rest of their lives reading to learn." Project Prime Time was intended to get Indiana school children off to the best possible start.

Indiana spent $66.5 million in 1987-88 to reduce class sizes in grades K and 1 to a ratio of 1:18, and to 1:20 in grades 2 and 3.

Indiana reimburses the local school system $21,000 for each additional teacher needed to reduce class size. When the number of students is not sufficient to justify adding another teacher, schools may substitute a full-time instructional aide.

By 1988-89 all 302 Indiana school systems had chosen to participate in Prime Time. On August 3, 1988, Governor Orr reported, "A sign of local

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commitment to Prime Time is the number of school systems which have added classrooms to accommodate the program. . . .

"The decision to build schools, renovate old buildings, and invest in portable classrooms is not made lightly, but it is with the utmost confidence that there is a payoff in Prime Time, and that payoff is better student discipline, better student attitude, increased parental involvement, innovative teaching, and most importantly, better student performance. . . .

"Come to Indiana, talk with our teachers, talk with our principals, visit our classrooms, and see for yourself that, properly implemented, Prime Time can improve student achievement and attitude in those crucial early years of schooling when the foundation is laid for future success. A good beginning has no end."

Tennessee's Project STAR

In May 1985 the Tennessee legislature funded a state-wide longitudinal study of class-size effects on pupil achievement and development in primary grades K-3. The $12 million study, Student Teacher Achievement Ratio (STAR), involved 6,500 students in 76 schools in 42 school systems. Schools were classified as urban, suburban, rural, and inner-city. The study randomly assigned students to different class sizes: small (13-17), regular (22-25), and regular (22-25) with a full-time aide. Teachers were also randomly assigned to the classes.

The study measured student achievement in kindergarten using the Stanford Early School Achievement Test II (SESAT II) and the Basic Skills First (BSF) mastery test. At the end of first grade, all students took the Stanford (Primary 1) Achievement Test and Tennessee's own Basic Skills First (BSF) curriculum-based, criterion-referenced test.

Students in small classes (1:15) made significantly greater gains, by both statistical and educational measures, than those in regular-size classes and regular-size classes with full-time aides. Significant gains occurred at the end of grades K, 1, and 2. (The grade 3 analysis is not yet complete.)

Researchers who participated in the analysis of data reported, "These data confirm that the small-class effect, while not immense, is found in two basic subject areas, at three grade levels, and in all four school settings. It is particularly strong in inner-city schools. These schools have the highest proportion of minority students, the lowest overall performance levels, and are in need of the academic 'boost' that small classes can provide. Few, if any, classroom-level interventions have been identified that have a consistent impact of this sort."[2]

Reading Readiness/Teaching Practices

Project STAR collected a wealth of information that answers several questions about educational processes. But two questions are especially relevant:

- What are the effects of class size (1:15) on Kindergarten Reading Readiness Achievement?
- What teaching practices, and personal and professional characteristics of Project STAR first-grade teachers contributed to greater student achievement in reading and math?

Class Size and Reading Readiness

Some 2,837 students from 38 elementary schools serving rural, urban, suburban, and inner-city communities in 26 systems helped answer the first question. From this large student population, we sampled the Basic Skills First (BSF) records submitted by kindergarten teachers who were in the first year of Project STAR. The sample included 51 small classes, 49 regular-size classes, and 40 regular-size classes with full-time aides.

The 1985-86 study identified 74 BSF reading objectives grouped in three categories: word identification skills, comprehension skills, and reference and study skills. Twenty-five of these objectives were tested and teachers kept the records of each student.

We analyzed data from individual kindergarten students, as well as from groups of students in Project STAR. We also included demographic data on sex, attendance, and socioeconomic status. (The definition of socioeconomic status was based on whether a child received a free or a reduced-cost lunch.)

"Significantly Greater Gains"

The analysis of the 25 tested Basic Skills showed statistically significant differences in the mastery of skills between students from small and regular-size classes and between small and regular-size classes with full-time aides. Children from small classes mastered an average of one more objective than those in regular classes and 0.6 more objectives than those in regular-size classes with full-time aides.

Suburban and rural students achieved higher scores than inner-city and urban students, showing a statistically significant interaction among the three class types and the four geographic localities: urban, rural, suburban, and inner-city. Here are some other results worth noting:

- Students with low socioeconomic status achieved their highest scores in the small classes and their lowest in the regular-sized classes.
- Students who attended class more than 90 percent of the time achieved better scores than students present less often in all three types of classes.
- Students in small classes who attended 90 percent of the time showed the greatest gain.

The analysis also uncovered statistically significant relationships for sex, socioeconomic status, geographic localities, and achievement in the total 25 Basic Skills and the subcategories, Comprehension and Word Identification.

Male students with low socioeconomic status who lived in the inner-city and were in regular-sized classes achieved the lowest mean scores on the 25 total Basic Skills and the 20 Comprehension Skills. These at-risk students achieved their highest scores in the small classes, which we found to be the most beneficial for all students.

Small class size is therefore a significant factor in kindergarten reading readiness achievement.

Who Is an Effective Teacher?

School executives continually face questions about how to get the most for their money. Because reducing class size can be a costly option, educators must be sure they are making the best use of this practice. And it is clear from the data that the key to a more successful learning experience for children in a smaller class is—as might be expected—the caliber of the teacher at the front of the room. Thus, one question to be answered is, "What are the characteristics of the effective teacher and how does he or she get the best results?"

To answer that question, we observed and interviewed the Project STAR first grade teachers whose classes had made the greatest gains. Teachers were chosen, according to the results of the Stanford Achievement Tests given at the end of kindergarten (SESAT II) and first grade (Stanford Primary I). (For our method of finding these teachers, see the accompanying box on page 8.)

Again, each school had the same three class-size categories mentioned above: *i.e.*, small (13-17), regular-size (22-25), and regular-size with full-time instructional aide (22-25). We conducted interviews using a guide modeled after one developed by the Northwest Regional Educational Laboratory.[3] Teachers were rated poor, fair, good, or excellent on each of 12 criteria. From this process we identified 49 excellent, effective teachers.

Certain Shared Characteristics

The results of the observation and interview study showed that these 49 effective teachers shared a number of identifiable characteristics, including a variety of instructional planning activities, teaching strategies, and types of materials used.[4]

The effective teachers had high expectations for student learning, provided clear and focused instruction, and closely monitored student learning progress. When children didn't learn, effective teachers retaught the material using alternative strategies. They also used incentives and rewards to promote learning.

Effective teachers used highly efficient classroom routines. They set and enforced high standards for classroom behavior and, at the same time, developed and maintained excellent personal interactions with their students. They also demonstrated excellent organizational skills so that each of these teachers had approximately an hour per week more time for teaching math and reading.

Family involvement

Effective teachers believe that the families of their students should be continuously involved in their children's learning. They believe in and try to maintain open communication between home and school, employing home visits, telephone conversations, note-writing, and teacher-parent conferences, and they often have informal chats with family members who pick up students after school. In these many ways, they are able to explain to parents the necessity of becoming involved in their children's learning experiences.

Ninety-five percent of teachers interviewed said they encouraged the families to keep up with their students' progress in school. These same teachers said they would be willing to visit the home of every student, if the school system provided time during in-service hours or a substitute teacher during the school day.

Effective teachers involve the families of their students in other important ways, also. They invite family members to serve as volunteers in the school.

Effective teachers suggested a number of specific ways that family members could become involved. They included the following:

- Listen to children, as they read at home.
- Help children with math by using flashcards or other instructional aides.
- Check the student's homework.
- If possible, try to drop by to eat lunch with the child at school.
- Plan home and family activities to keep children involved.

One question we asked the teachers was, "What kinds of things do you do in order to prevent a student in your classroom from experiencing failure?" Over a third answered that they try to prevent failure by involving the families of their students in the learning process. Apparently, effective teachers believe in the premise that a child's parents are the first and foremost teachers.

But *Why* Are They "Effective"?

We asked these 49 effective teachers to identify two factors that they believed could account for their success. The responses we received most often were *love for children and teaching*, *high expectations for their students*, *patience*, and *understanding*.

The observers identified a number of characteristics that appeared to typify the performance and perceived attitudes of a majority of the effective teachers. Chief among them, of course, was the ability to relate well with children. Additional characteristics were consistency in behavior, a professional attitude, and a mature outlook.

Effective teachers motivate their students by being themselves enthusiastic and positive about their work. They also temper persistence and thoroughness with compassion, fairness, and the ability to empathize with their students. A sense of humor, coupled with intelligence and dedication to the profession, also enhances the effectiveness of any teacher.

Instructional Strategies for Beginners

The observers asked the 49 effective teachers to identify the instructional strategies they felt were most effective and to suggest any instruction-related activities that they believed were important for beginning teachers to hear. Their responses are recorded in the following paragraphs under four major categories, using the teachers' own words.

1. Attitudes, Techniques, Materials

"Always be enthusiastic. Students will mirror your attitude." "Be consistent." "Provide positive reinforcement. Use praise." "Adjust your teaching style to the needs of the class." "Adjust your

pace for your class." "Use pairs in peer tutoring." "Repetition and drill are very important." "Ask probing questions to teach thinking." "Include creative writing in the curriculum. It is better than any test."

2. Individualization

"Modify work so students can succeed." "Provide instruction on their level." "Give immediate feedback." "Try to deal with each child at his or her level." "Get to know each student—listen to them; be careful not to ignore anyone. Get the quiet ones to talk." "Monitor and give instant feedback." "Follow through with children. Use auditory, visual, and tactile senses in order to cover all learning styles." "Use relevant materials to tie their experiences to the skill to be learned." "Use hands-on materials." "Use manipulatives." "Use flash cards at school and get children to use them at home." "Use learning centers."

3. Organization

"Set up a file system for materials." "Be organized but flexible." "Have structure." "Get organized and stay or-

Real Issues and False Assumptions about Class Size

Brad Duggan

Five years ago, Texas reportedly had a ratio of 1 teacher to 17.3 students, while state law mandated an "average" ratio of 1:25. But actually the average kindergarten and first and second grade classrooms had 27 students. And some classes, primarily in poor school districts, had *over 40* children.

By 1988, however, we had produced a major change in these numbers. The average class size for K-2 is now 20 to 21 students per teacher, or a 26 percent decrease per classroom.

But lowering class size at the elementary grade levels is not in itself significant unless it improves student achievement. Within three years, while class size has been dropping, scores on our state skills test (TEAMS) have been rising 15 percent for students tested in the third and fifth grades.

We can now statistically validate, from one end of Texas to the other, that lowering class size at the early grade levels has had a significant, positive impact on student achievement.

On the way to this achievement, however, we had to confront a number of real issues, as well as put to rest a few false assumptions. Here are the fruits of that experience.

Real Issue #1

Lowering class size at the elementary grades requires a major re-channeling of new dollars and a shift in school priorities. Therefore, Issue Number One in anybody's book is going to be **cost**.

In Texas, over a two-year period, the state pumped an additional $1.2 billion into local school districts to help pay for smaller classes and other educational reforms. But for many school districts this state help was not enough. They had to raise local taxes to implement all the required reforms. Some school districts had to pass bond elections in order to obtain the additional classrooms to meet the new, lower class size maximums.

Meanwhile, the legislature concluded that Texas was spending the least amount of money at the elementary grade levels, but spending 32 percent more per student at the higher grade levels. To be effective, a legislative committee said, Texas had to reverse these priorities—and we had to find the money to pay for it. I'm pleased to say that so far we've done both.

Real Issue #2

The next real issue is to **define class size**.

Most national statistics include nearly everyone in the definition of "teacher". But would you, for instance, include special-area physical education teachers, music teachers, and coaches, or do you count just the home room teachers and the students assigned to them? Do you count administrators, counselors, librarians or aides? Many people do.

But we said no. Today, Texas law defines the class size ratio in the narrowest terms: *i.e.*, the number of students assigned to each teacher, excluding *all* special-area teachers and other support personnel.

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ganized." "Planning pays off." "Set up a structure that allows time to be with individuals."

4. Discipline

"Be firm but fair. Be consistent. Do what you say you will do." "Let them know you mean business." "Keep everyone's attention with constant eye contact as you move around the room." "Explain rules in the beginning." "Have a daily routine so students know what to expect." "Let children know in the morning exactly what is expected that day." "Have an overall plan and make it work. They will learn more, and you will have less stress." "Use a quiet voice." "Involve all of the children. Try to make it fun." "Take the time to set the atmosphere you want."

"Effective Teacher" Profile

We were able to construct a profile of the effective teacher in Project STAR. He or she is 38.5 years old, has a Bachelor of Arts or Sciences degree, is certified to teach grades K-3, and has 10.5 years of teaching experience, with 8.0 years at first grade level.

Real Issue #3

A third issue to face is the fact that the lowering of class size must be matched with a **change in teacher behavior**.

For class size reduction to really impact children's learning, teachers must receive extensive and continuous training to alter their teaching strategies. We believe that to justify the amount of money necessary to lower class size in Texas, we must have an extensive teacher training program to go along with it.

Unfortunately, some people say that until we get teachers properly trained, we should not lower class size. That's not true. It makes sense to provide teachers with smaller classes and *then* train them to teach effectively in those classes.

Real Issue #4

It's difficult to lower class size across the board in K-8, so you must decide on **the grades that need it most**.

Research shows that smaller classes benefit younger children the most. While some studies advocate lower class size for everyone, most studies have shown a positive, statistical relationship with student achievement in grades below the fourth. Hence, we have smaller classes from prekindergarten through the fourth grade.

Real Issue #5

What's the **maximum effective class size**?

There is no clear answer. The maximum must be set in relationship to the grades you include and the dollars you can spend. Still, a close relationship does occur between lower class size and higher achievement among young children.

While research clearly shows that significant achievement is obtained with a cap of 15 students per teacher, no state has yet established a maximum that low. Studies by the Educational Research Service and others found a "break point" on the high end at 22 students per classroom.

In Texas, we set a maximum of 22 students per classroom. But we know that on any given day the average in each class will be lower than 22, allowing for absences and the places held open for the arrival of transfers.

Real Issue #6

While drafting a new law on class size, a state must consider **how to implement it:** how to phase it in, how to monitor compliance, how to penalize noncompliance, how to handle shortages of teachers and buildings, how to evaluate program effectiveness, and how to keep teachers trained and informed.

Those are six real issues to consider when proposing smaller classes. Unfortunately, these real issues are often not raised in debates about class size. Instead, the public is asked to focus on a number of false assumptions, those with no basis in research or in fact. I offer the following 11 for you to ponder.

False Assumption #1

It is assumed that something magical happens when the 16th child walks out of the classroom. That's when the teacher starts changing his or her teaching techniques and strategies.

But that's ridiculous. There is no doubt that the fewer the children in a class, the more the remaining children will achieve. And the research does show that as the number of students declines, it is easier to isolate achievement variables.

But that doesn't mean 15 is the magic number. I was told years ago that student achievement would not improve until a class had no more than 25 students. Classes came down to 25, but then I was told that success was right around the corner, where the maximum class size was 20 students. When class maximums dropped to 20, I was advised that student achievement would not improve until every class had no more than 15 students.

The Educational Research Service says that a positive relationship exists between student achievement and a class size of 22 or less. California says that "student achievement is generally higher when class size is reduced, especially below 20 students." In Texas, the critical mass is 18 to 20 students per class; in Indiana it's 17 to 20 students.

Pick your own number—as long as it's lower.

The teacher will have been trained in the Tennessee Instructional Model and will have reached Level I of the Tennessee Career Ladder. The effective teacher has usually enrolled in further college courses that year, and has one or more family members also involved in education.

The effective teachers surveyed in this sample consistently showed certain similarities in affective qualities. Teachers relied on a sense of humor to promote learning and motivate students. They displayed enthusiasm in "acting," demonstrating, and role-playing activities.

They had positive attitudes towards children, emphasized positive behavior, and praised children's successes. A love for children seemed to permeate the entire professional repertoire in nearly all of the observations.

In addition to these common characteristics, class size appears to have been a contributing factor to the success of these 49 effective teachers. Thirty (60 percent) had small classes, twelve (24 percent) had full-time instructional aides, and seven (15 percent) had regular-sized classes (22-25).

False Assumption #2

Some critics say you should spend your money in more effective ways than merely lowering class size.

This may be true if you look at all grades, but it's *not* true for the early grades. In K-3 especially we have students who need a strong and close relationship with a responsible, caring adult. That adult needs to be a trained educator, a professional.

But some research does say that older students in peer coaching with youngsters are also effective and increase pupil achievement. Many schools use this approach and it should be encouraged, but it's no panacea.

A few years ago the research showed that computers were also very effective in the early grades. But more recent research indicates that this may be true among older students; but for younger students computers are not as significant as smaller classes.

After all is said and done, the best way to improve student learning in the crucial early grades is to lower class size.

False Assumption #3

This assumption says that what you should really do is put disadvantaged children into small classes with 15 students but put your average and above average kids into larger classes with 25 or so students.

This says we should treat the disadvantaged child with more regard than we do the average child. That's hard to defend, when the research clearly says that *all* students do better when their classes are smaller.

We must also remember that schools do more than address achievement in the early grades. They also create positive attitudes for learning, enhance self-concepts, create enthusiastic readers, and instill other important social and intellectual values.

False Assumption #4

Some school districts have high achievement *despite* having large classes as well.

This is true—but it's rare. And where we've looked at these situations, we invariably find a unique environment that is not transferrable. We also find that these same school districts are themselves trying to lower their class size.

This is usually where critics bring up the example of Japan, which maintains an average class size of 35 students who are academically successful. But we challenge any comparisons between the Japanese and American systems because of the major differences between our societies. (Rather than go into this in any detail, I will refer you to an excellent publication titled *Japanese Education*, released in 1987 by the U. S. Department of Education.)

False Assumption #5

Another favorite of critics is this one: You want to lower class size only to provide better working conditions for your teachers.

You have to reject this out of hand. Class size needs to be reduced because it increases student learning; whether or not it also improves working conditions is irrelevant.

False Assumption #6

"There's a brand-new report out that says class size is not important."

You'll hear this over and over again. And here and there someone will indeed turn out a report (usually politically motivated, in my opinion) to dispute the significance of class size in the early grades.

But we have to remember that the evidence over the past 15 years makes this conclusion crystal clear: Lower class size in the early grades improves achievement.

False Assumption #7

Be careful of the critic who says you're just trying to take money away from secondary schools in order to fatten up elementary school budgets.

This is a mean-spirited argument that must be dismissed at once. We should not—and *do* not—wish to undermine the quality of education at any level in order to try to improve our elementary schools.

Recommended Options

Based on this research, we offer elementary school principals the following recommendations, relative to the size of classes and the people who teach in them.

Recommendation 1: Relative to the reduction of class size in grades K-3. School authorities should reduce class size for grades K-3 to 15:1. (At its recent San Antonio convention, the NAESP's Delegate Assembly approved a resolution calling for a pupil-teacher ratio of 15:1 for early grades.—*Editor*) Since small classes provide time for more individualization and enrichment, the STAR research leaves no doubt that small classes offer significant advantages in reading and mathematics over larger K-3 classes.

Recommendation 2: Relative to the placement in grades 1 and 2 of teachers who possess the skills and characteristics identified in this study. The primary requirement is that teachers have a love of children and teaching. In addition,

Nevertheless, we elementary school principals do believe that our schools have one major priority: to teach every child to read and write. If this is true, then we must do it in the earliest grades. And if that requires a re-allocation of funds within a school district, so be it.

False Assumption #8

Some people—especially some educators—like to rely on their personal experiences, rather than on the research. So now and again you will hear someone say in all sincerity, "I've been a principal for over 20 years. And nothing in my experience tells me that lowering class size is going to make much difference in how well students do. What we *really* need is (fill in the blank)."

Times change. But some people don't. The fact of the matter is that you can't stack one person's experience up against the research of the past 15 years.

We know that more children are entering our elementary schools today with more problems, and we also know that the best way to deal with this phenomenon in the early grades is to lower the ratio of students to teachers.

False Assumption #9

Just because you have smaller classes doesn't mean you also have competent teachers to teach them.

And that may be a correct assessment—today. But if allowed to stand, it stifles any chance of making improvements tomorrow. Also, if you carry this argument to its logical conclusion, you'd be forced to employ only the most competent teachers and, if necessary, pack their classrooms with 50 or more students.

In Texas, a school district can be exempted from the class size requirement, if it cannot find qualified teachers. But so far we've had no difficulty finding qualified, competent teachers.

False Assumption #10

Another troubling argument from critics is this one: Over the last ten years, we lowered the pupil-teacher ratio nationwide to 17:1, and achievement scores have actually *gone down*. So lowering class size has not worked after all.

Watch out for this one because it mixes up apples and oranges. Most of the class size reduction over the past decade has occurred because we've averaged in many new special education programs, language deficiency programs, and vocational education and other programs for special populations. The 17:1 ratio does not represent only classrooms of average students in the early grades.

False Assumption #11

Pick a number, any number. Pick 1. Pick 22. It's arbitrary anyway.

The line has to be drawn somewhere, that's true. A per classroom maximum of 22 students will cause the actual classroom average to be about 19.5 students to one teacher. In any case, most researchers agree that 17-20 students is a reasonable level.

Conclusion

In 1984, Texas established as a major priority the improvement of elementary schools. These are some of the things we did:

- We created an educational program for all disadvantaged four-year-old children.
- We moved from funding half-day to full-day kindergarten.
- We tightened rules on student attendance.
- We expanded statewide student testing.
- We mandated teacher and administrator training in effective teaching practices.
- We moved from a compliance to a performance accreditation system.
- We required mandatory tutorials for students not functioning at grade level.
- We established a summer school program for language-deficient students.
- And we set in motion a commitment to keep doing better.

But one of the most significant reforms we put into place was the setting of class size maximums at the early grade levels. □

they must possess the skills to involve the family in the education of children, including knowing how to help parents teach their children.

Recommendation 3: Relative to home visits and teacher training. Teachers could make home visits either during in-service time or during school time (if the school can provide a substitute teacher). Teachers need to learn effective techniques in making home visits in order to acquire the skills necessary to teach parents.

The late David Newbury, Assistant Superintendent of Schools in Hazel Park, Michigan, once suggested this method of implementing home visits. "When the idea of home visits began, the superintendent and central administrators did it first. Principals followed that lead by setting aside a half-day a week for a year. Then teachers were helped to gain confidence and commitment through combined workshop and visitation days. Now home visitation by teachers is a frequent, organized, and institutionalized practice in all our elementary and junior high schools. The basic principle is that if you want residents to reach out to schools, then reach out to the residents."[5]

Connie Wirt, Pine Grove, Pennsylvania, gave this assessment of the value of her home visits. "The rapport established by these visits enabled our classroom to experience successes and accomplishments that were almost unbelievable. There was a closeness that I hadn't found to exist before. Most parents actually don't know how much teachers care about their children and their welfare. Home visits have helped bring about a better understanding by the parents of the human values in teaching. They have established a rapport between home and school, provided an unparalleled insight into students and their home environment, and promoted better public relations in the community."[6] □

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How We Found the Good Teachers

We arrived at composite scores of achievement gains for 338 classes, using the shakeout method described here. Then we talked to the teachers of the highest-scoring classes in this group.

We applied the shakeout method separately to the reading and math tests, as indicated by the parentheses. First, we averaged the SESAT II Total Reading (Math) scores to obtain an overall class reading (math) mean score. We applied the same procedures to calculate an overall class reading (math) mean score for the Stanford Primary I test administered at the end of first grade. Next, we subtracted the SESAT II class reading (math) mean from the Primary I class reading (math) mean score to provide a scaled-score average gain in reading (math) for each class.

To obtain an overall scaled-score average gain for each class, we used an average of the combined reading mean gain and the math mean gain. We then ranked the class scaled-score average gains within each school category.

We observed and interviewed teachers whose classes ranked in the top 15 percent of scaled-score average gains for each of four school types: rural, urban, suburban, and inner-city.

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The Case for Smaller Classes and Better Teachers

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